pab® Pro User Manual

In order to operate the pab® system you need to:

1) **Install the pab® Pro program**
2) **Connect hardware parts**
3) **Set up user and patient data in pab® Pro program**

These steps are described in detail in the chapters 1-3 below.

Once the pab® system is ready, you can start testing your patients/clients.

Instructions for various tests can be found in the "pab® Manual for Standard Tests".

If you encounter any problems with running the program please contact:

support@pressureairbiofeedback.com

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pab® Pro - General information

The pab® (Pressure Air Biofeedback) Pro Set is used for muscular function diagnosis. It consists of a pab® Pro System (measuring device and software) and inflated TOGU training devices, which are required for a measurement. The software must be downloaded as described below in Chapter 1

pab® Pro parts included:

Parts	Pcs	Description
pab® Pro device with 4 connectors	1	pab® Pro System
USB cable	1	
Tube	4	
Inflator needles	4	
TOGU Bodyroll Senso (colour amethyst)	2	TOGU Training Devices (inflated)
TOGU Throw Ring (colour amethyst)	1	
TOGU Dynair Ballkissen XL Senso (colour amethyst)	1	
TOGU Senso Ball 23cm (colour amethyst)	1	
TOGU Balance Cushion (colour amethyst)	1	
Straps, black with numbers	2	Accessories
Ball pump	1	
pab® Pro User Manual	1	Manuals
pab® Manual for Standard Tests	1	

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1. Installation - pab® Pro

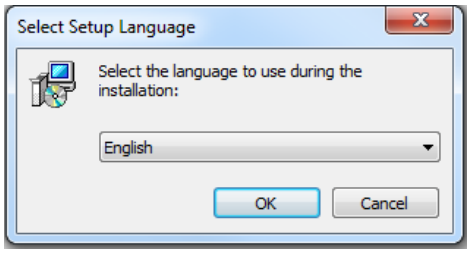
Please notice:
If you have previously installed an older pab® version on your computer, please uninstall it and delete all related files before downloading the new one.

To download the new pab® software program, go to following website:

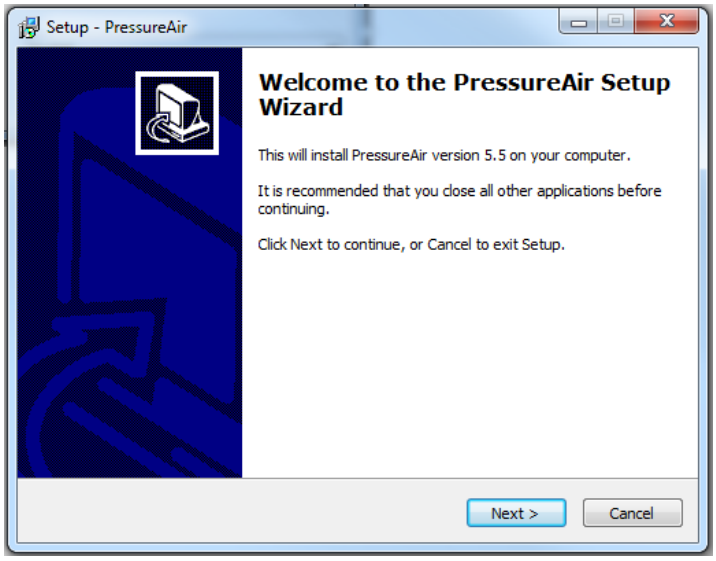
www.pressureairbiofeedback.com

- Go to "**Downloads**" and select **"Program Download".**
- Click on the "pab® Setup" icon to download.

Follow the easy 9 steps as shown below:



1.
Select English language and then select - **OK icon.**


Setup - PressureAir
Welcome to the PressureAir Setup Wizard
This will install PressureAir version 5.5 on your computer.
It is recommended that you close all other applications before continuing.
Click Next to continue, or Cancel to exit Setup.
Next >
Cancel

2.
Select - **Next icon.**

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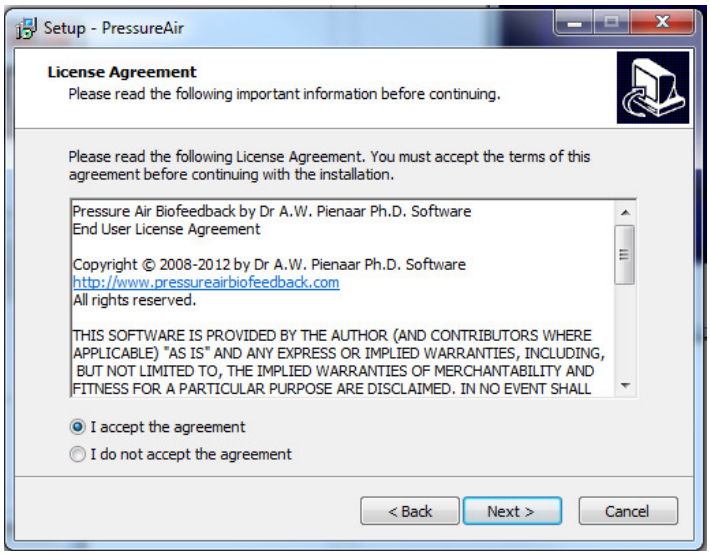
Setup - PressureAir
License Agreement
Please read the following important information before continuing.
Please read the following License Agreement. You must accept the terms of this agreement before continuing with the installation.
Pressure Air Biofeedback by Dr A.W. Pienaar Ph.D. Software
End User License Agreement
Copyright © 2008-2012 by Dr A.W. Pienaar Ph.D. Software
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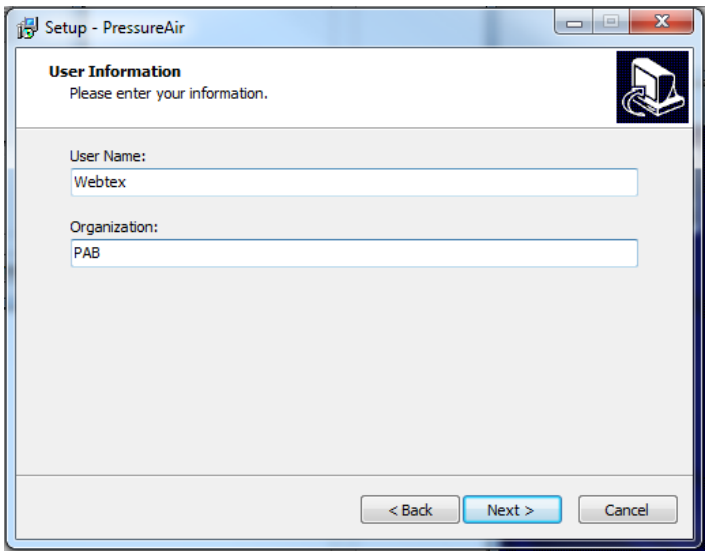
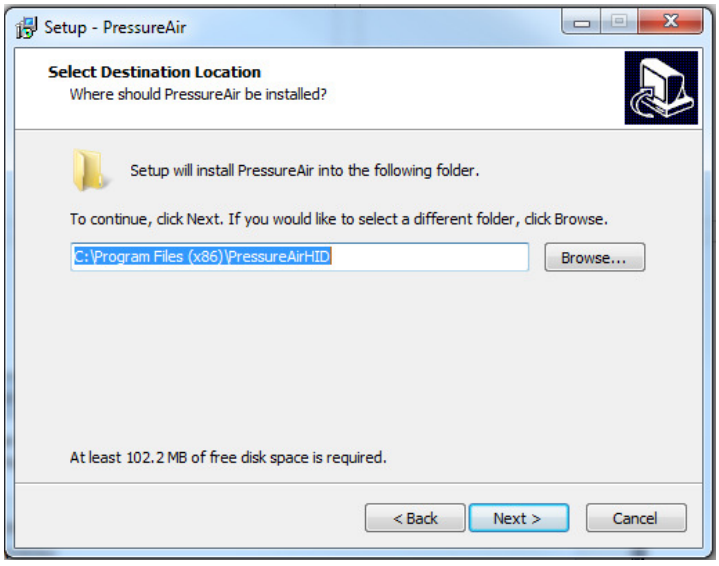
All rights reserved.
THIS SOFTWARE IS PROVIDED BY THE AUTHOR (AND CONTRIBUTORS WHERE APPLICABLE) "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL
I accept the agreement
I do not accept the agreement
< Back
Next >
Cancel

3.
Select - **I accept the agreement**.
Then Select - **Next icon.**



4.
Enter **User Name** &
Organization.
Then Select - **Next icon.**


Setup - PressureAir
Select Destination Location
Where should PressureAir be installed?
Setup will install PressureAir into the following folder.
To continue, click Next. If you would like to select a different folder, click Browse.
C:\Program Files (x86)\PressureAirHID
Browse...
At least 102.2 MB of free disk space is required.
< Back
Next >
Cancel

5.
Select - **Next icon.**

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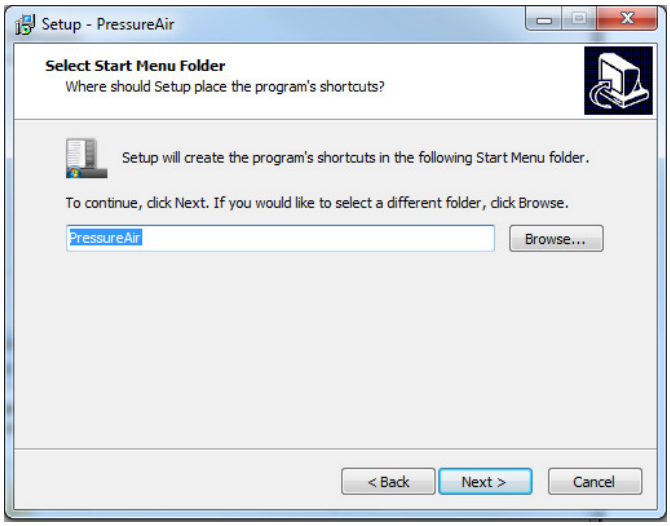
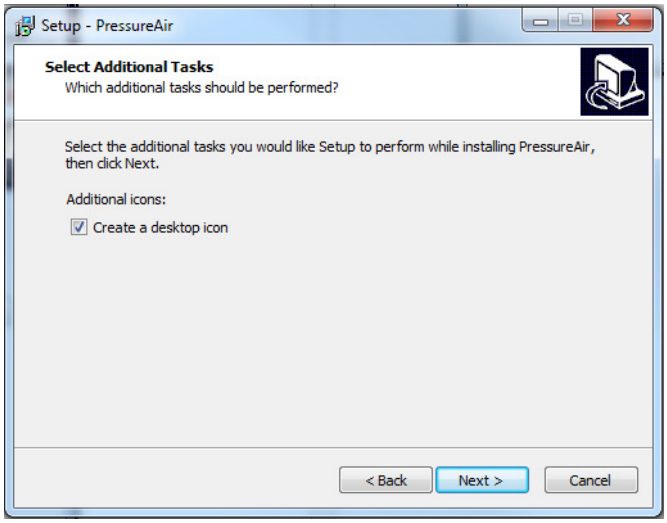
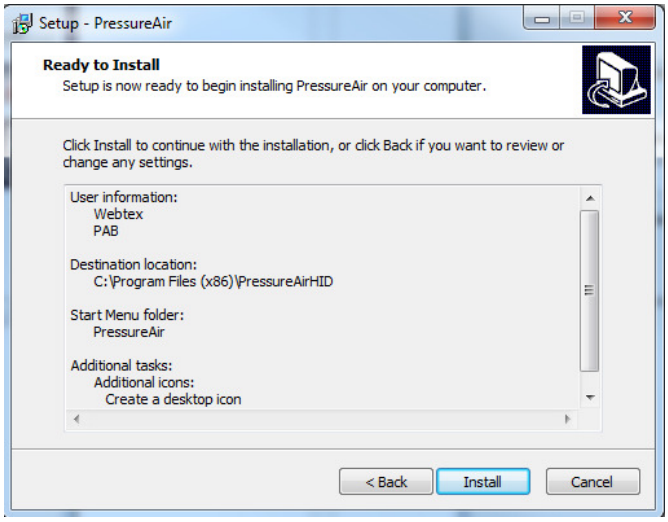

Setup - PressureAir
Select Start Menu Folder
Where should Setup place the program's shortcuts?
Setup will create the program's shortcuts in the following Start Menu folder.
To continue, click Next. If you would like to select a different folder, click Browse.
PressureAir
Browse...
< Back
Next >
Cancel

6.
Select - **Next icon.**


Setup - PressureAir
Select Additional Tasks
Which additional tasks should be performed?
Select the additional tasks you would like Setup to perform while installing PressureAir, then click Next.
Additional icons:
Create a desktop icon
< Back
Next >
Cancel

7.
Select - **Create a desktop icon**.
Then select - **Next icon**.



8.
Select **- Install icon.**

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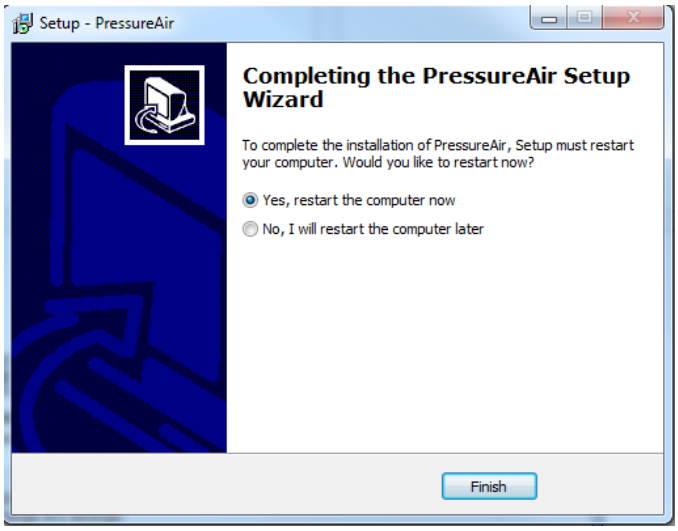
Setup - PressureAir
Completing the PressureAir Setup Wizard
To complete the installation of PressureAir, Setup must restart your computer. Would you like to restart now?
Yes, restart the computer now
No, I will restart the computer later
Finish

9.
Select - **Yes, restart comp..**
Select **- Finish icon**.

The pab® Pro Program is now installed on your computer.

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2. Connecting the pab® Pro System parts

This chapter describes how to connect the hardware parts which are neccessary to run the pab® System.

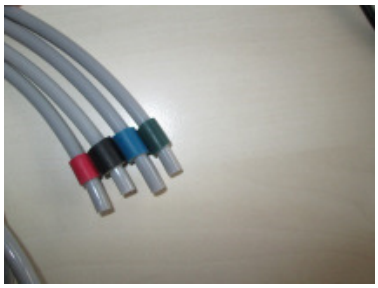
1) pab® Pro system hardware parts

The pab® Pro system includes the following hardware parts:

1 pab® Pro Device with four connectors
4 Tubes, gray with colour mark
4 Inflator needles, metal with connector for tube
1 USB cable, black
2 Straps (straps are not needed to run the pab® system and are used only for particular tests, as described in pab® Manual for standard tests)

2) Tubes and Connectors

Each one of the four tubes has a colour mark at one end only. The other end is unmarked.



3) Connecting the tubes

The colour mark on the tube must match the colour mark of the connector on the pab® device (e.g. red tube to red connector)

Insert the unmarked end of the tube in the connector on the pab® Pro device.
Up to four tubes can be connected at a time, but at least one tube is needed to run a test.

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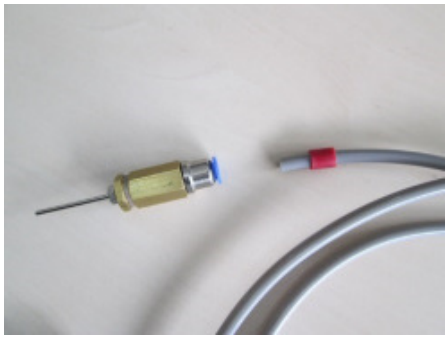
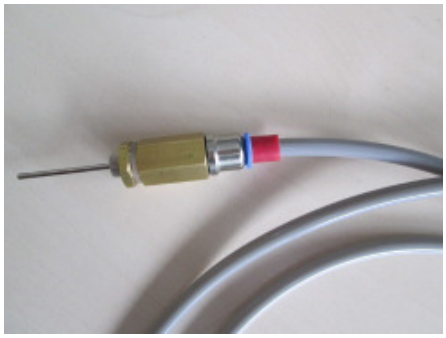
4) Attaching the inflator needle

Insert tube with the marked end into the connector of the inflator needle

5) Connecting USB cable

The pab® Pro device features a small USB port. Connect the USB cable to the pab® Pro device and then to your computer.

6) Disconnecting Tube

In order to detach the tube from the connector (needle and pab® Pro device), press the blue ring of the connector downwards. This will release the tube and it will come off easy.

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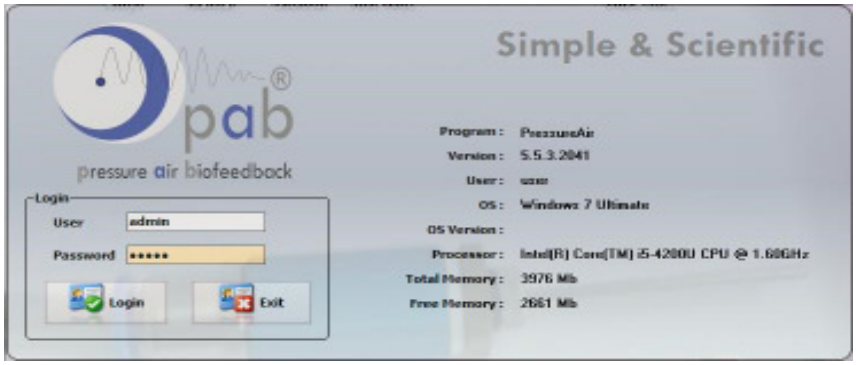
3. pab® Pro Program Set up

Once the pab® program is installed as described in Chapter 1, this icon shall appear on your desktop.

Connect pab® Pro device to your computer **before** starting the pab® program.

After the pab® Pro device has been connected to the computer, double-click the Pressure Air icon and a pab® ® Login window shall appear:

1) LOGIN



- Enter “**admin**” for User and “**admin**” again for Password.
- Click Login to open your pab® ® program.
- The pab® program can now be operated.

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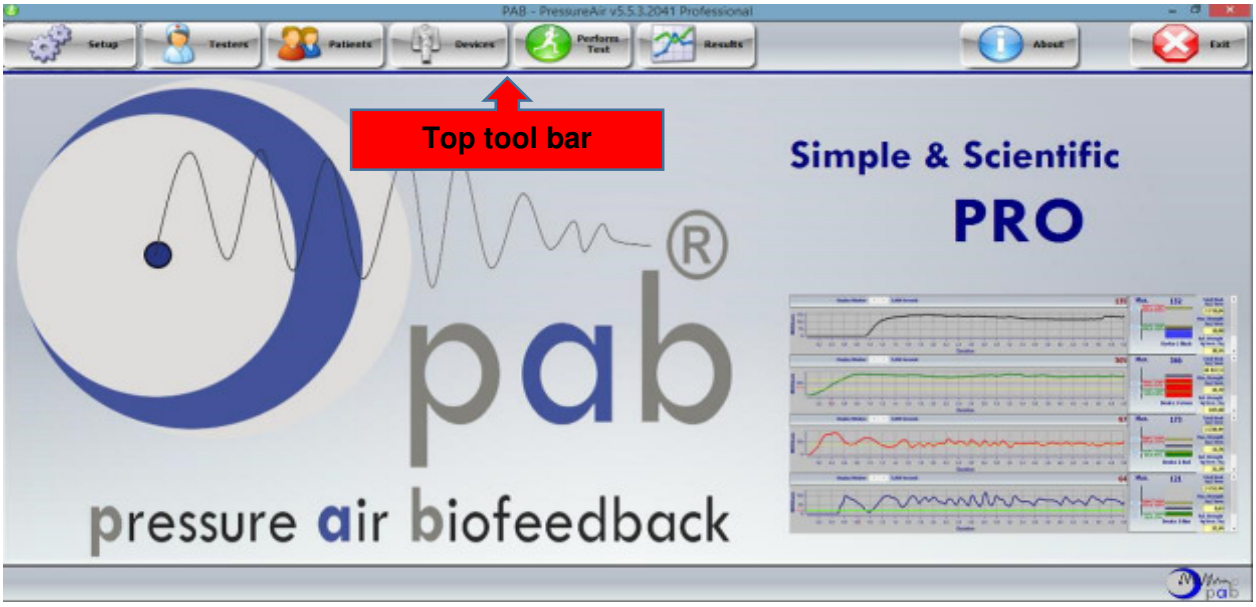
2) pab® Program and Settings



The pab® Program can be operated with the buttons in the top tool bar. The buttons have the following functions:

Setup: The language can be chosen and the name of the organization/company can be entered Here.

Testers: All testers, who operate this program can be registered with this function. Testers are all persons, eg. employees of a practice or organization, that use the pab® Program for testing

patients or clients.

Patients: All persons (patients, athletes, or other clients) who are being tested with pab® can be registered with the function **Patients.**.

Devices: This function is only necessary if the inflated TOGU training devices are to be calibrated with a different value than 0 mbar. **It is not necessary for the standard tests, which are described in the "pab® Manual for Standard Tests**".

Perform Test: Tests are performed using this function. Recommendations for various tests are described the "**pab® Manual for Standard Tests**".

Results: Test results which have been previously saved can be viewed with this function.

About: Shows information about program version and system data.

The following describes how to enter data and operate the pab® Pro program. Please note that the values and settings below are only a recommendation.

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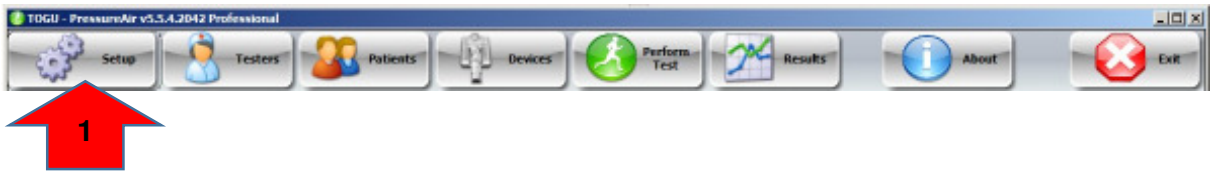
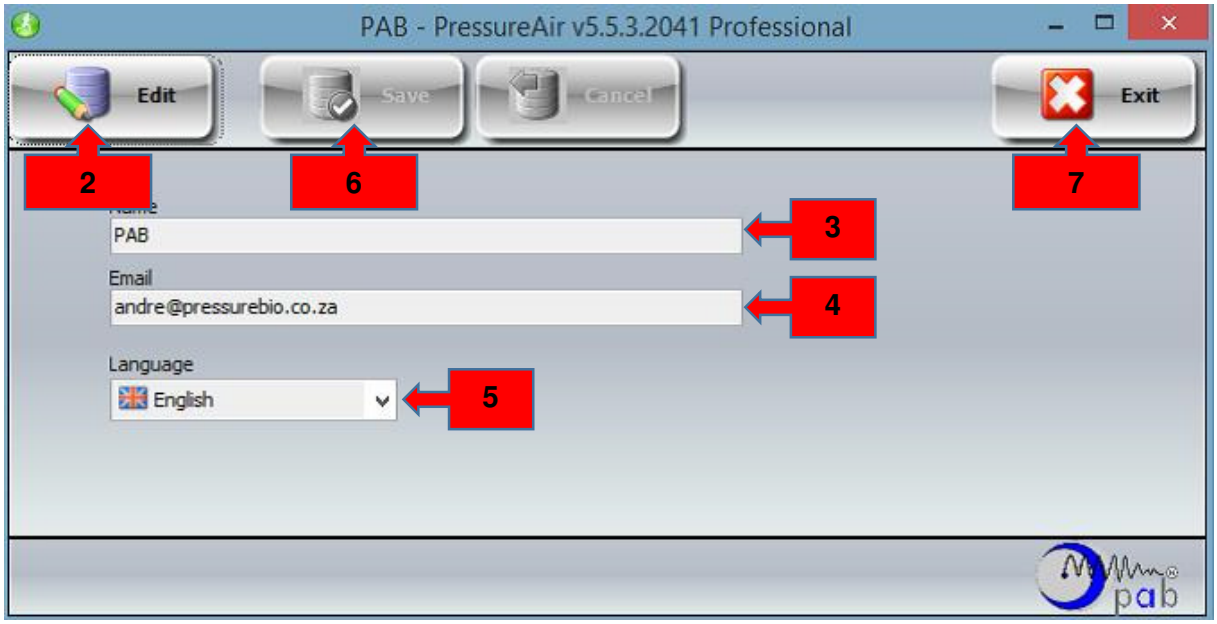
Set Up



1- Select the **Setup** icon on **toolbar** for general setup and the Setup window will appear.



2- Select the **Edit** icon to change the setup settings.
3- Enter a name which can choose yourself under **Name**.
4- Enter your appropriate **email address**.
5- Select the **language** for your pab® ® to display.
6- Select the **Save** icon to keep your setup settings.
7- Select the **Exit** icon to exit Setup.

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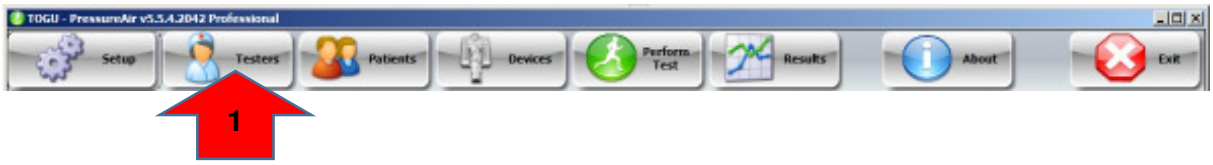
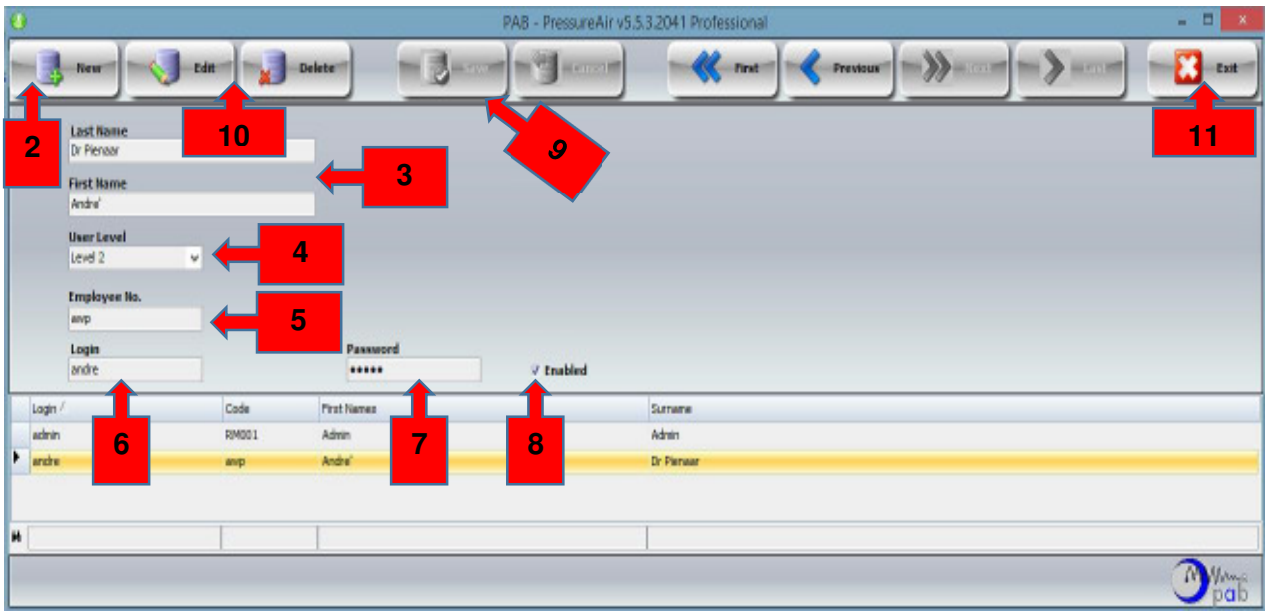
Testers



1- Select the **Testers** icon on **toolbar** for general setup and the Testers window will appear.



2- Select the **New** icon to insert a new tester.
3- Enter the **name** and **surname** of the tester.
4- The selection field **User level** allows to define for each tester the functions that can be used.
Level 2 = all functions can be accessed
Level 1 = only patients data can be entered and tests performed
Level 0 = only tests can be performed
At least one of the testers must have “Level 2” in order to be able to access all functions in pab®.
5- Enter an **Employee** number or user code for the tester.
6- Change **Login** details for the new tester when logging into pab®.
7- Change **Password** to Testers specific password.
8- Ensure the **Enabled** box is checked so that new login and password details change.
9- Select the **Save** icon to save the new tester.
10- Selecting the **Edit** icon you can edit tester’s details or select the Delete icon to delete testers.
11- Select the **Exit** icon to exit Testers.

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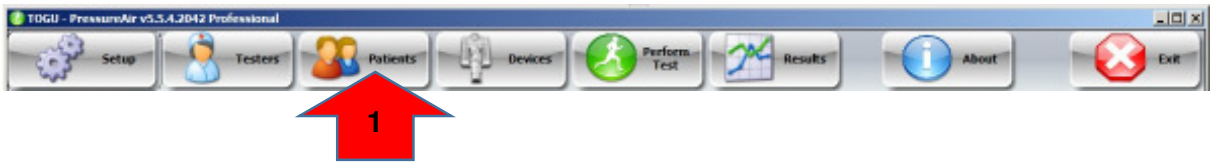
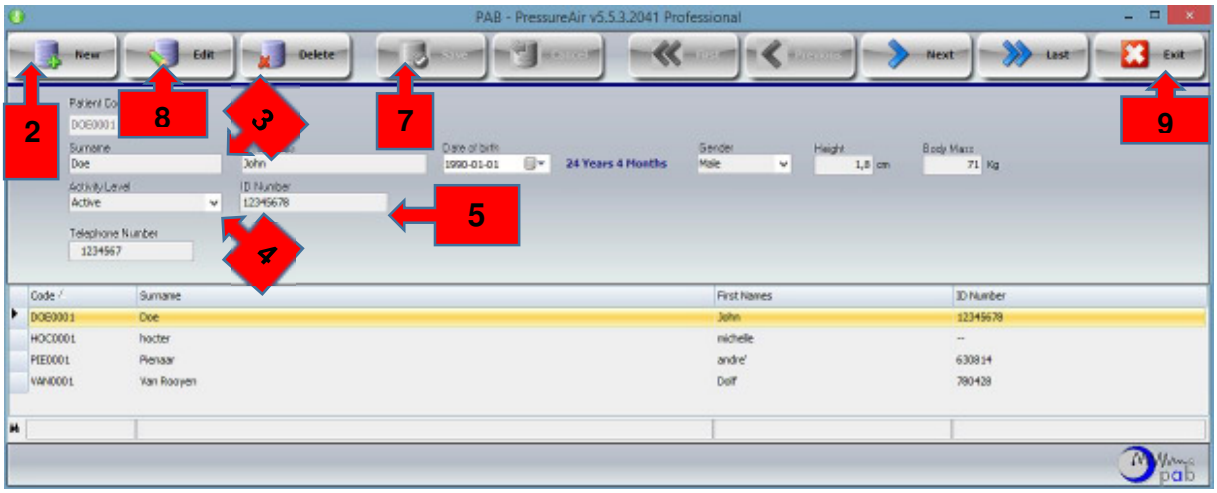
Patients



1- Select the **Patients** icon on **toolbar** for general setup and the Patients window will appear.



2- Select the **New** icon to insert a new patient.
Patients are defined here as every person who is being tested with the pab® (this can also be a healthy athlete). This term serves for simplification.
3- Enter the patients **Surname, Name, Date of Birth, Gender** (drop down arrow), **Height** (using a comma to separate decimal numbers) and **Body Mass**.
4- Use the drop down arrow to select whether the patient is **active** or inactive. (Active = 30 minutes of continuous exercise like brisk walking, cycle, swim, gym, etc. x3 per week. Inactive = less than what is required for active).
5- Enter **the identification number** of the patient.
6- Enter the **telephone number** of the patient.
7- Select the **Save** icon to save the patient.
8- Selecting the **Edit** icon you can edit patient's details or select the Delete icon to delete patients.
9- Select the **Exi**t icon to exit Patients.

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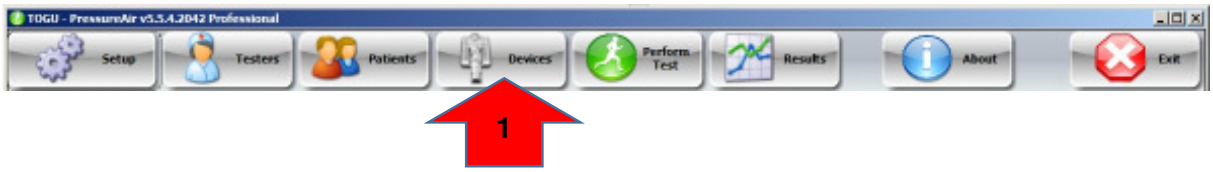
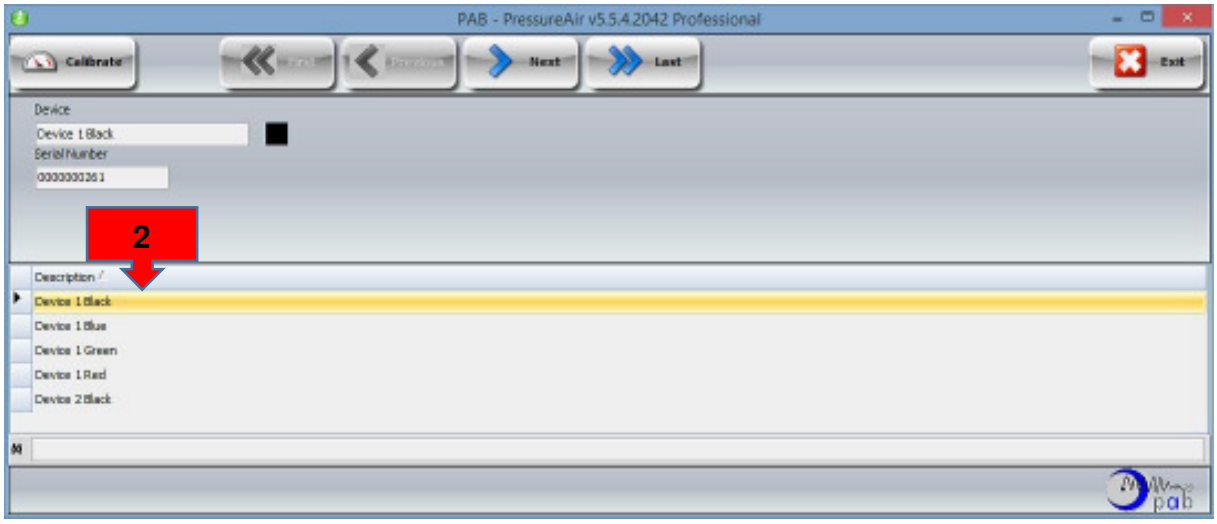
Devices



Please note that this function is <u>not</u> required for the standard tests, which are described in the "pab® manual for standard tests".

This function should be used only if you want to calibrate with other values than 0 mbar or to double check the recommended calibration value of 0 mbar (see pab® manual for standard tests).

1- Select the **Devices** icon on **toolbar** for general setup and the Devices window will appear.



2- Select the correct pab® device for calibration, e.g. Device 1 Black.

3- Remove the inflator needle with the tube from the valve of the TOGU training device and then pump some additional air with the ballpump into the TOGU training device.
4- Check if the desired pressure value has been reached (eg. 50 mbar) by connecting the TOGU training device with the pab® Pro System and repeating Step 2.
5- The calibration value can always be set at 0 mbar (recommended) by only inserting the inflator needle without the tube into the TOGU training device (see pab® manual for standard tests).
6- Select the **Exi**t icon to exit Devices.

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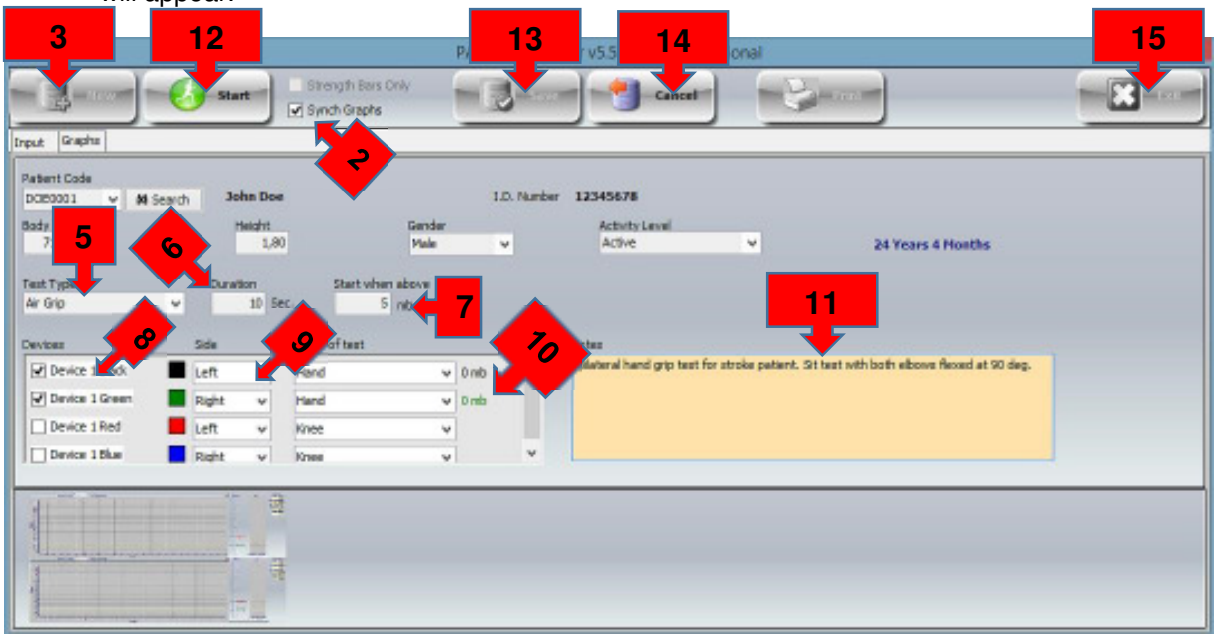
Perform Tests

The following describes the entry fields and options for performing a test. Recommendations for particular tests are shown in the pab® manual for standard tests. Apart from that, it is also possible to perform tests according to own testing schemes.

1- Select the **Perform Test** icon to perform a muscle strength test and the Perform Test window will appear.



2- Select **Synch Graphs** to activate strength graphs. Select **Strength Bars**, if you want to see only bars, without a graph.
3- Select the **New** icon to enter patient to be tested.
4- Use the **drop down arrow** to select the patient to be tested or select **search** button to find patient.
5- Use the drop down arrow to select **Test Type** (e.g. Air grip, Pull Ring, etc.).
6- Enter **Duration** of the test, standard is **10 seconds**. However, you can select any time duration depending if you want to test maximum muscle strength (3-5sec), muscle strength and endurance (10sec), muscle endurance (30-60sec). If you enter 0, pab® ® will run indefinitely unless you select the start/stop icon (no. 12) to terminate the test.
7- Enter 5 mbar in **Start When Above**. This means that the test will only start when air pressure exceeds the **5 mbar** threshold as soon as patient exerts force and will measure force output from 0 sec to end of test. If you select 0 mbar, the test will start immediately without the patient exerting force and strength/force calculation will not be accurate.
8- Select Device 1 Black and Device 1 Green (if you want to test 2 limbs), for example.
9- Use the first drop down arrow to select Left or Right.
10- Use the second drop down arrow to select anatomical site (e.g. hand, hip, etc.) to be tested.
11- Additional information can be entered if you click on the **Notes** box.
12- Select **Start** icon to start the test.
13- After completion of the test, select the **Save** icon to save the test data.
14- If not satisfied with the test select the **Cancel** icon and redo test.
15- When testing is finished, select **Exit** icon to exit Perform Test.

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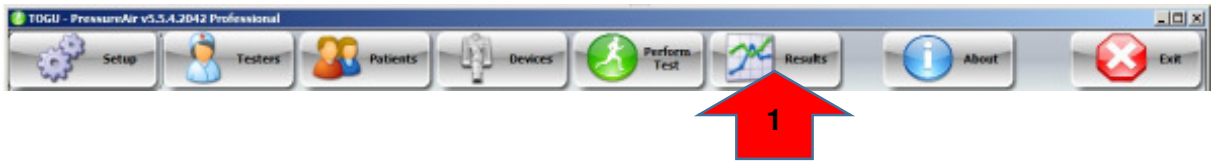
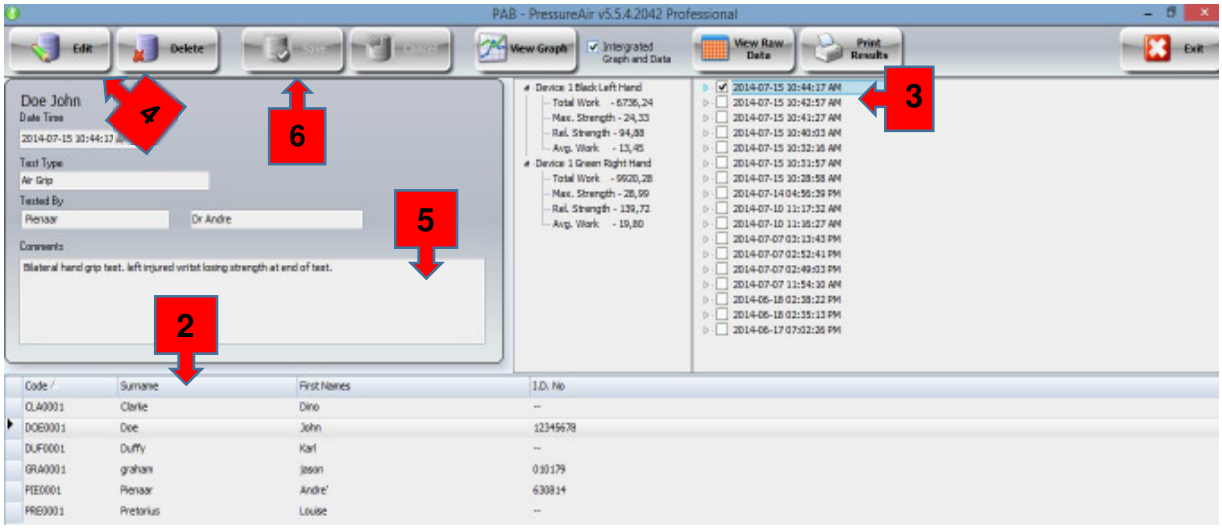
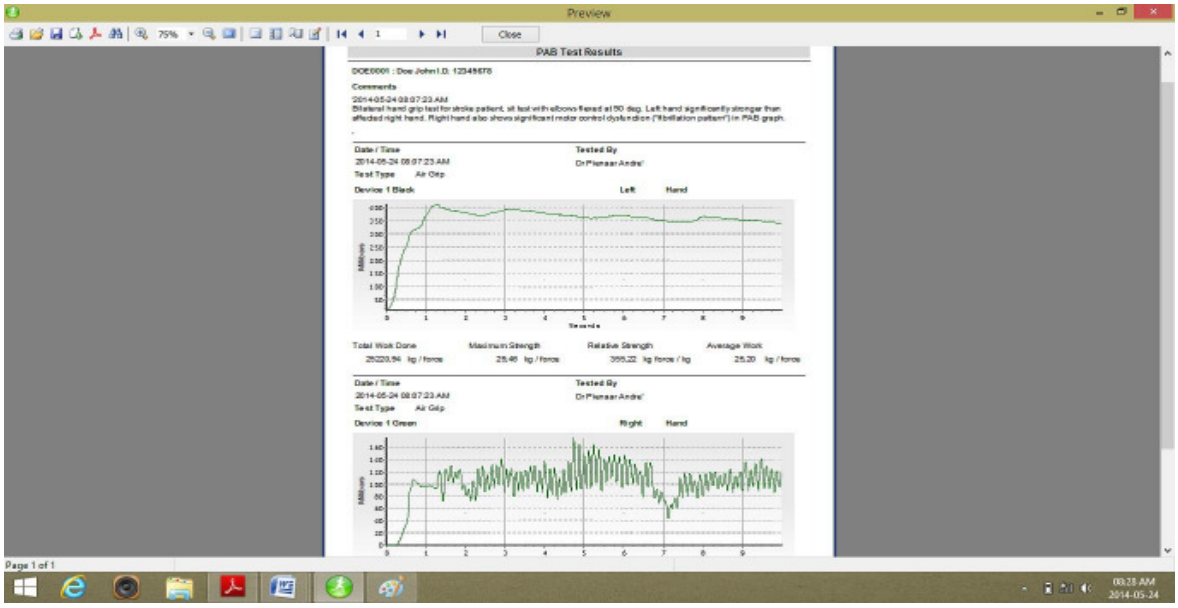
Results Option 1



1- Select the **Results** icon on **toolbar** for general setup and the Results window will appear.



2- Select the **patient** tested
3- Select the appropriate **test results** from the patient tested. It is possible to select more than one test at a time, all of which will be presented in the same chart.
4- Select the Edit icon to activate the **Comments** box.
5- Type your comments in the comments box.
6- Select the Save icon to save your comments.
7- Select the Print Results icon to open the Print Results window (see window below).
8- Select Print icon to print test results.
9- Select Close icon to exit Print Results.



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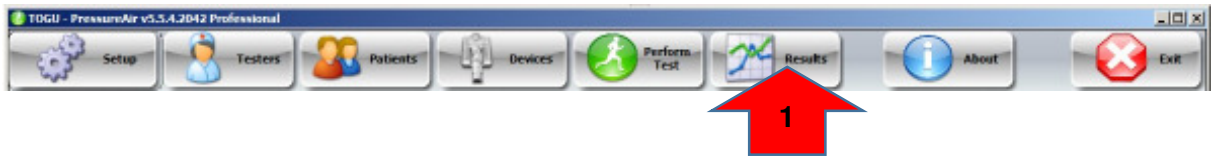
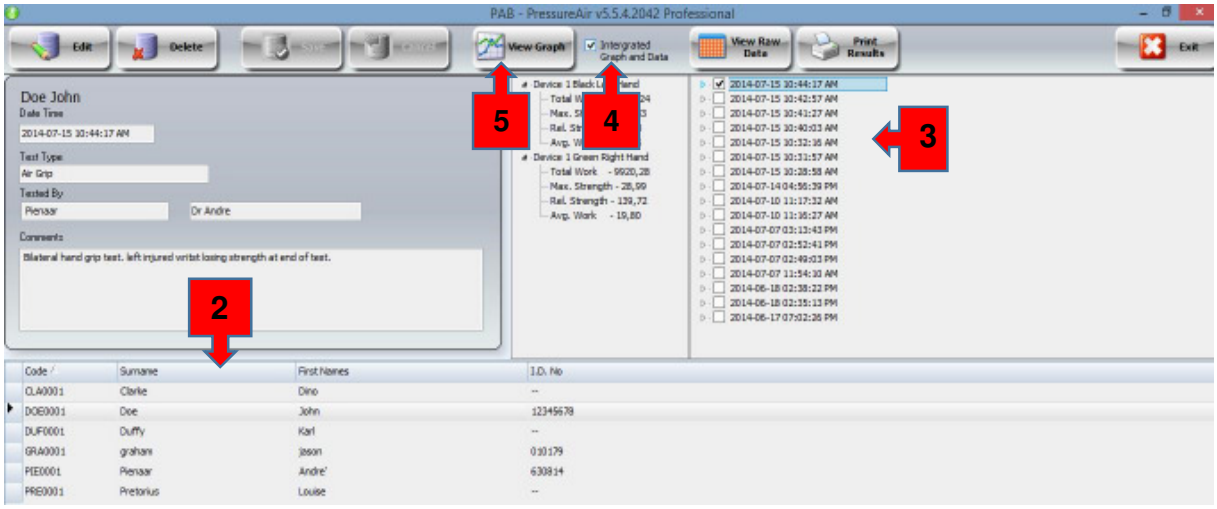
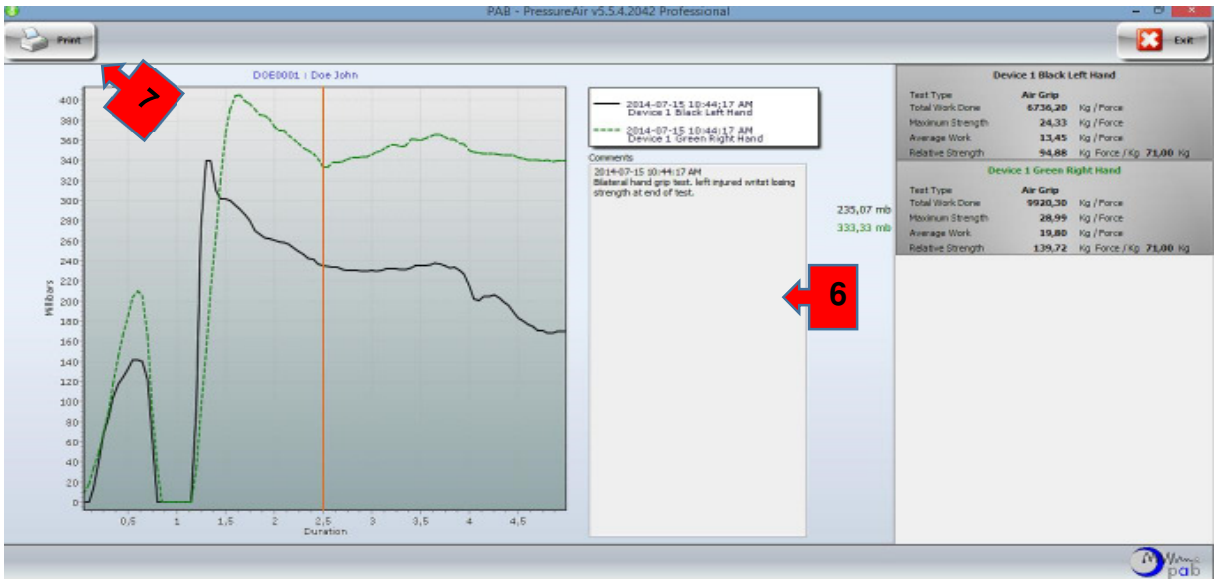
Results Option 2



1- Select the Results icon to view test results and the Results window will appear.



2- Select the patient tested.
3- Select the appropriate test results from the patient tested.
4- Select or tick the integrated Graph and Data box (to activate graph and data together).
5- Select View Graph icon to view graph and data together (see window below).


PAB - PressureAir v5.5.4.2042 Professional
Print
Exit
7
DOE0001 : Doe John
Millibars
Duration
2014-07-15 10:44:17 AM
Device 1 Black Left Hand
2014-07-15 10:44:17 AM
Device 1 Green Right Hand
Comments
2014-07-15 10:44:17 AM
Bilateral hand grip test. left injured wrist losing strength at end of test.
235,07 mb
333,33 mb
6
Device 1 Black Left Hand
Test Type Air Grip
Total Work Done 6736,20 Kg / Force
Maximum Strength 24,33 Kg / Force
Average Work 13,45 Kg / Force
Relative Strength 94,88 Kg Force / Kg 71,00 Kg
Device 1 Green Right Hand
Test Type Air Grip
Total Work Done 9920,30 Kg / Force
Maximum Strength 28,99 Kg / Force
Average Work 19,80 Kg / Force
Relative Strength 139,72 Kg Force / Kg 71,00 Kg

6- Insert comments in the Comments box
7- Select Print icon to print test results

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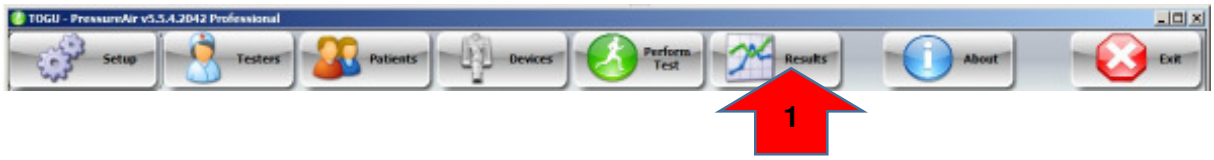
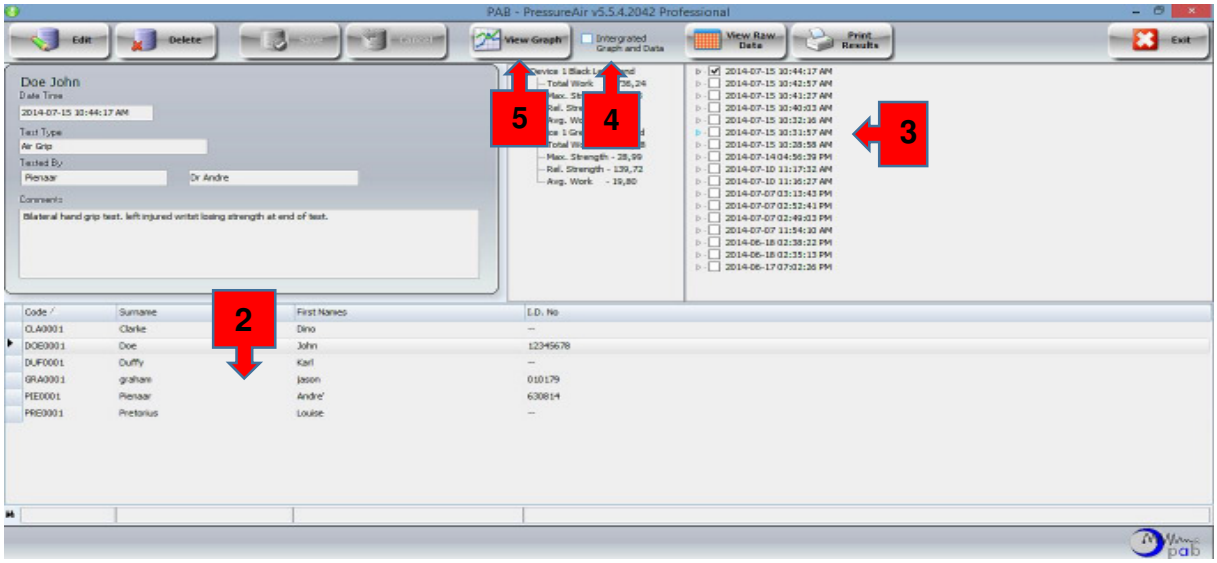
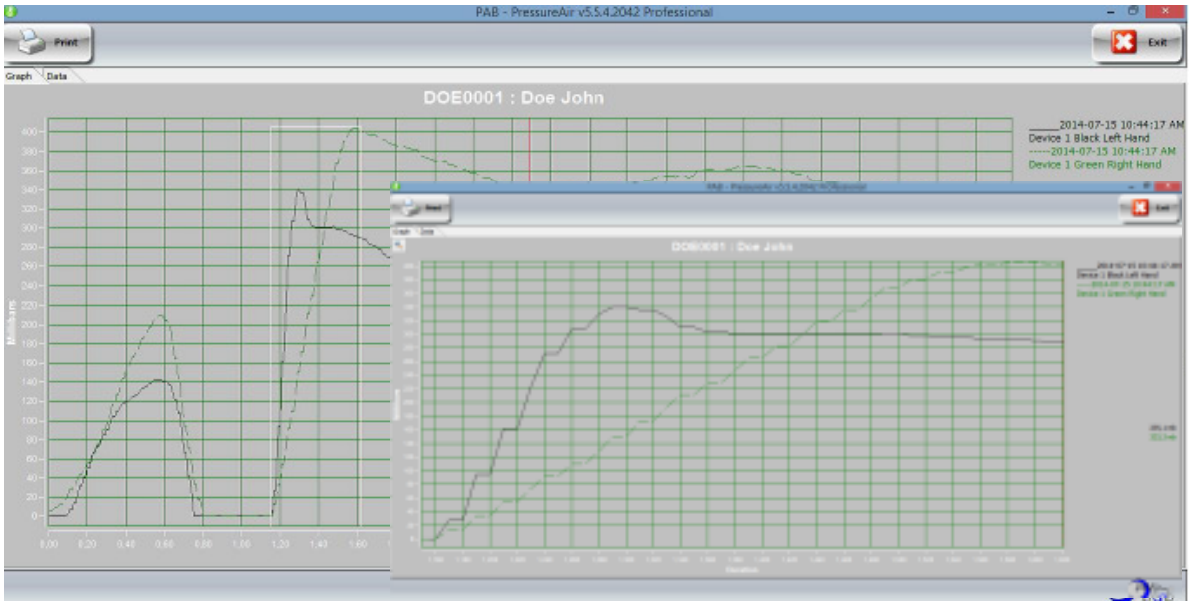
Results Option 3



1- Select the Results icon to view test results and the Results window will appear.



2- Select the patient tested.
3- Select the appropriate test results from the patient tested.
4- Select AND UNTICK the integrated Graph and Data box (to activate full page graph).
5- Select View Graph icon to **view full page graph (see window below)**.



6- For zoom-in function, select from top, left click + hold, and drag cursor to bottom (see white box area) and zoom-in graph.
7- Select Print icon to print test results

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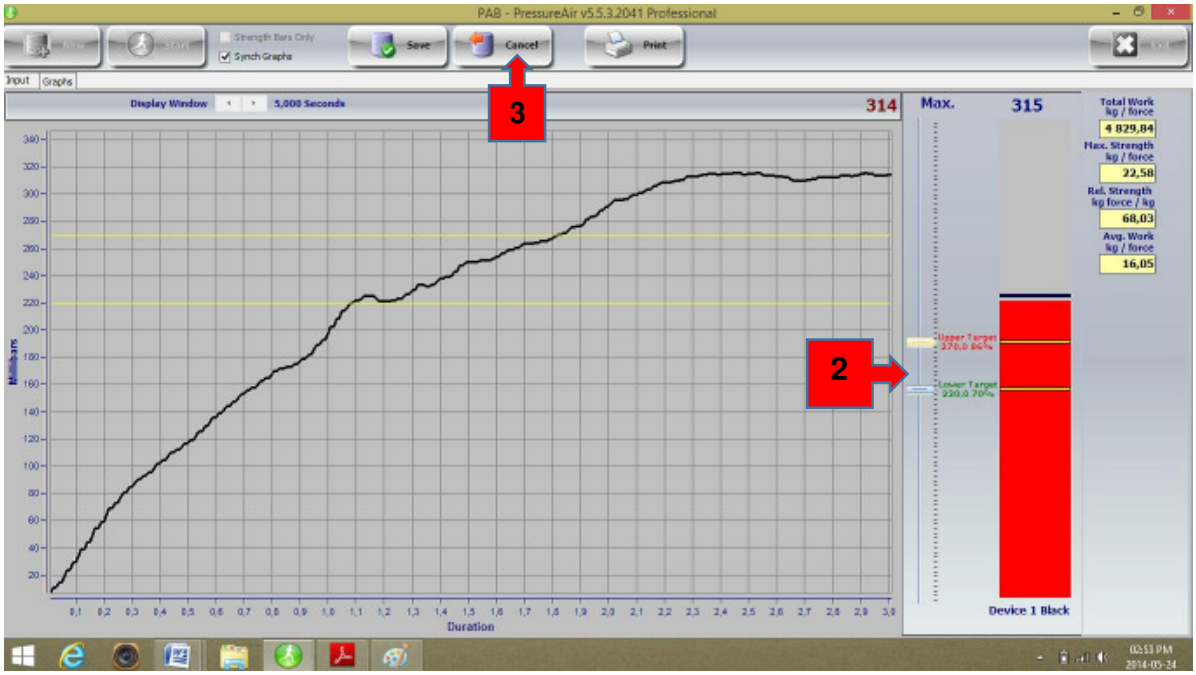
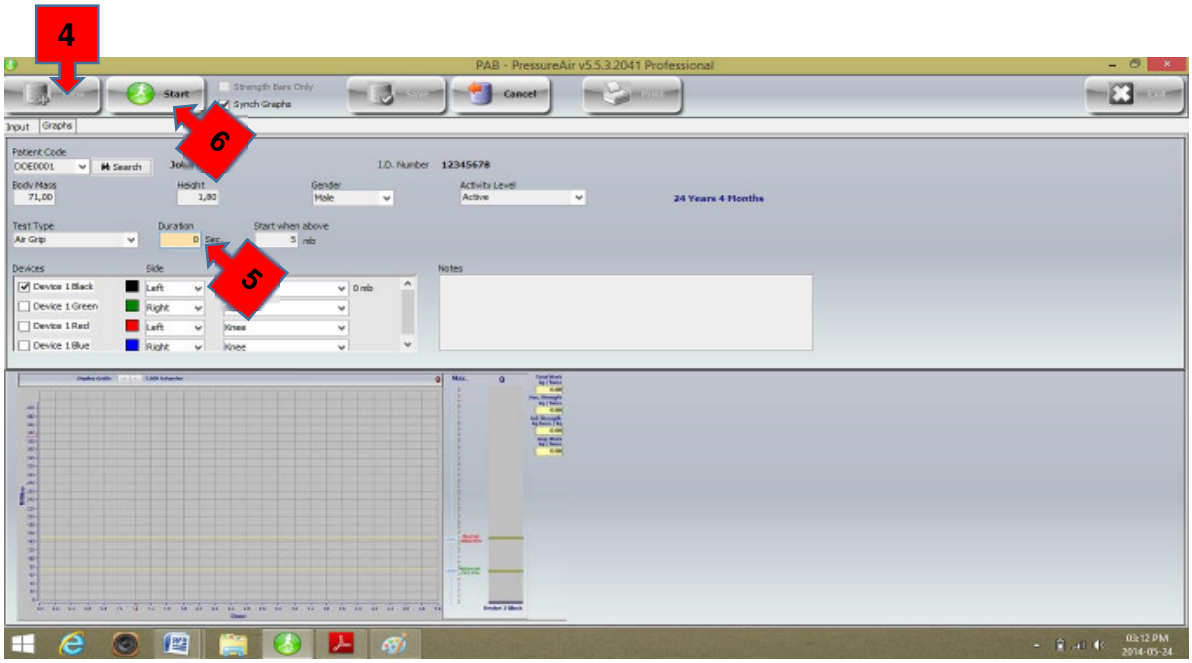
Isometric training with pab®

1- To use pab® ® as a biofeedback exercise system, follow same 12 steps as in Perform Test (page 5), but do only a 3 sec maximum isometric strength test. This is to set up target training zone (See Example Below).
2- After 3 sec max. test, select target training zone between ±70-85% of maximum strength force (See Example Below).
3- Select Cancel, because it is not necessary to save maximum test and target zones.



4- Select New to open the Perform Test window again (see window below)
5- Select Duration and enter nil (0), for unlimited time to train.
6- Select Start to begin training session.



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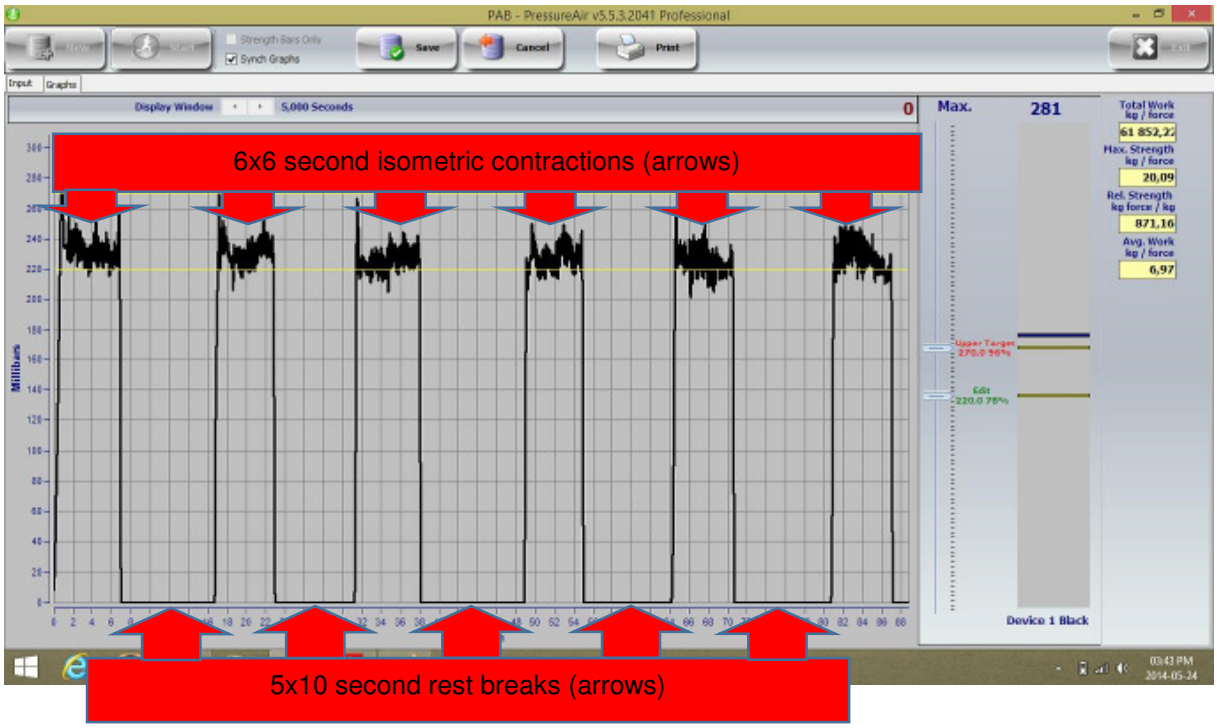
7- A standard isometric exercise rehabilitation session with pab® ® will be as follows:

A: Set 1 is done at the selected 70-85% target training intensity for 6 seconds, repeated 6 times with 10 second rest breaks in between (6 x 6 x 10 principle). See example of one set, below.

B: After completion of a set, rest 2 minutes.

C: Do Set 2 and Set 3 in the same way. (see pab® ® isometric training graph below).



Definitions:

Strength: The graph on the chart represents the pressure in millibar, which is created inside the TOGU Training device by the patients application of force.

The boxes **Max Strength** and **Rel. Strenght** show the force with Kilogram as unit. 1 Kilogram equals 9,81 Newton.

Total Work:	The total amount of strength calculated in kg/force (measured every hundreds of a second) from 0 seconds to the end of the test.
Maximum Strength:	the maximum or highest peak strength achieved in kg/force, while doing the strength test.
Relative Strength:	the total work done (see total work above), divided by the patient/athlete's body mass. This indicates the strength/weight ratio of the patient/athlete in kg/force per kg body mass.
Average work:	the total work done (see total work above), divided by the total calculated strength measurements.

You will find instructions how to test various muscle groups in the **pab® Manual for Standard Tests.**

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